REMARKS

Applicant has amended claim 1 to add the limitations of claims 3 and 4.

The Examiner has rejected claims 1-14 under 35 USC 103 as being unpatentable over Ebersole, 4,219,335, in view of Baselt, 5,981,297, Colin, 5,925,573 and either Jeffers or Mallary, 5,654,854.

The Examiner has stated that Ebersole teaches immunochemical testing using tagged reagents. An analyte such as an antigen or antibody was determined in body fluid by depositing a sample of the body fluid on a surface (2) coated with a receptor reagent specifically reactive with the analyte resulting in a complex. An immune reagent capable of affecting electrical reactance which was specifically reactive with the receptor reagent or complex was then added and the electrical reactance measured. For example, serum containing IgG was reacted with anti-human IgG on a Nylon 6 film, the resultant test zones were treated with great anti-human IgG tagged with magnetic particles, and the magnetized reaction surfaces analyzed by a magnetic particle detector. The system may be used manually, but it is readily adaptable to automated operation. For magnetic particles, magnetic pick-up heads such as those found in standard type recording equipment may be used. It is possible to arrange the receptor reagent on the surface in bands or to induce a periodic magnetization on the surface as that produced by a magnetic tape recording system and then to move the surface at a particular rate past a detector which will monitor frequency. The test surface can be flat or it can have depressions or dimples in which each test is conducted. The presence of a change in electrical reactance such as magnetic activity can be determined, even when a very small amount of the reactance tags is present. Therefore each test will usually require only a droplet of body fluid and the test area can be very small. Consequently, a large number of discrete test areas, and if desired, reference areas, can be arrayed on a single card or tape. The discrete areas may be either a series of tests for different selected proteins or a series of tests for the same protein. Since the method of Ebersole utilizes electronic rather than visual inspection it is readily adaptable to automated operation. A preferred system for the practice of the invention would include a station for entering the necessary test cards for the desired test. Cards may be entered individually or in a group as

required. The cards are moved automatically to a sample addition station where a droplet of a patient's body fluid is applied to each of the test areas on the card. An automated device may include temperature control and a station for equilibration of the body fluid on the test areas for predetermined times. The card is then moved to a station where the immune reagent is applied to each of the test areas. Again, there may be temperature control and equilibration systems incorporated. Next, excess immune reagent is removed, and the card is then examined for the presence of reactance tags remaining in the test by measuring changes in electrical reactance of the card test areas with a detector capable of determining the presence of magnetic particles. It is also possible to perform each operation on a card maintained at a single location in an automated or semi-automated device. The Examiner states that Ebersole does not teach the detector detecting the particles with a giant magnetoresistive effect or specific means to position the detector in proximity to each surface.

The Examiner states that Baselt teaches a system for performing assays in a manner substantially similar to Ebersole. In Baselt the detector for the proximity of paramagnetic particles is based on the giant magnetoresistive effect (See figs 2-7, col 3, lines 18-66 and columns 7-8). Detection of a single particle is taught as possible.

The Examiner states that Colin teaches an assay device similar to Ebersole in which the magnetic particles are detected by a detector (4) having an electromagnetic sensor (6) formed, in a traditional fashion, as a read head for an audio or video tape (Col 6, lines 3-19). Figure 3 teaches a single detector that is movable to a number of different detection locations.

The Examiner states that Jeffers teaches a thin film magnetoresistive head for use in reading magnetic data recorded on a storage device such as a film (audio or video tape).

The Examiner states that Mallary teaches a magnetoresistive sensor for use in reading magnetic data recorded on a storage device such as a film (audio or video tape). Col. 1, lines 28-32 teach that a giant magnetoresistive element is known as one type of this sensor. Line 38-43 teach that magnetoresistive sensors are known to have a sensitivity that exceeds other known magnetic sensors such as inductive sensors.

The Examiner states that it would have been obvious to one of skill in the art to incorporate a magnetoresistive sensing head as taught by Baselt, Jeffers or Mallary and in particular the giant magnetoresistive sensor of Baselt or Mallary because of their recognized advantage of greater sensitivity as taught by Baselt and Mallary. The Examiner states that it would have been obvious to provide the automated Ebersole device with a detection head as taught by Colin or to provide multiple detection areas in the detector as taught by Baselt because of the ability to measure multiple detection sites as taught by Baselt and Colin.

Ebersole does not teach a mechanism for positioning ach respective surface in working proximity to the detector for providing respective resistance. Further, Ebersole does not teach a controller for controlling the mechanism and for recording indicia of each respective resistance. Applicant has amended claim 1 adding the limitations of claim 3 and 4. Ebersol further does not teach that the detector comprises a multiplicity of physically defined active areas for independent detecting of each of a corresponding multiplicity of specimens of the plurality of specimens. Ebersol does not teach that each active area comprises a plurality of sensors, each sensor comprising an independent resistance responsive to paramagnetic particle proximity to the respective sensor in accordance with a respective giant magnetoresistive effect. Ebersol further does not teach that the controller records indicia of resistance of each sensor.

Further, there is no teaching to combine the references. Further neither Baselt, Colin, Mallary or Jeffers teaches that the detector comprises a multiplicity of physically defined active areas for independent detecting of each of a corresponding multiplicity of specimens of the plurality of specimens. None of the prior art references alone or in combination makes obvious that each active area comprises a plurality of sensors, each sensor comprising an independent resistance responsive to paramagnetic particle proximity to the respective sensor in accordance with a respective giant magnetoresistive effect. Further, none of the references, alone or in combination make obvious that the controller records indicia of resistance of each sensor.

The Examiner has rejected claims 1-14 under obviousness-type double patenting as being unpatentable over claim 1 of US patent 6,592,820. Although the conflicting

claims are not identical, they are not patentably distinct from each other because the instant claims are anticipated by, or differ only nominally from, the patented claim.

Applicant submits a terminal disclaimer.

Applicant now believes that the application is in condition for allowance.

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